## What is claimed is:

- A bio-liquid crystal polymer, comprising a
- 2 tissue-derived compound or the derivatives, wherein:
- 3 said bio-liquid crystal polymer has a characteristic of
- 4 liquid crystal under predetermined conditions and is
- 5 biocompatible.
- The bio-liquid crystal polymer according to claim 1,
- 2 wherein said bio-liquid crystal polymer has a solubility to a
- 3 solvent.
- The bio-liquid crystal polymer according to claim 1,
- 2 wherein said predetermined conditions include a temperature of
- 3 said bio-liquid crystal polymer.
- 4. A bio-liquid crystal polymer, comprising
- polyhydroxycinnamic acid, wherein:
- 3 said bio-liquid crystal polymer is biocompatible.
- 5. A bio-liquid crystal polymer, comprising a copolymer
- 2 which is synthesized by polymerizing two kinds of aromatic
- 3 series natural products which have two or more reactive
- 4 functional groups and are capable of polymerizing.
- 6. A bio-liquid crystal polymer, comprising a copolymer
- 2 which is produced by polymerizing a) any one of aromatic series
- 3 natural products which have two or more reactive functional
- 4 groups and are capable of polymerizing and b) one or more
- 5 selected from nucleic acids, amino acids, saccharides, fatty

- 6 acids, terpenes, porphyrins, flavonoids, steroids and
- 7 alkaloids which have two or more reactive functional groups and
- 8 are capable of polymerizing.
- 7. A bio-liquid crystal polymer, comprising a copolymer
- 2 which is produced by polymerizing two or more selected from
- 3 nucleic acids, amino acids, saccharides, fatty acids, terpenes,
- 4 porphyrins, flavonoids, steroids and alkaloids which have two
- 5 or more reactive functional groups and are capable of
- 6 polymerizing and have a rigid structural unit such as alicyclic,
- 7 double bond and triple bond.
- 8. A bio-liquid crystal polymer, comprising a homopolymer
- 2 which is produced by polymerizing an aromatic series natural
- 3 product which has two or more reactive functional groups and
- 4 are capable of polymerizing.
- 9. A bio-liquid crystal polymer, comprising a homopolymer
- 2 which is produced by polymerizing one selected from nucleic
- 3 acids, amino acids, saccharides, fatty acids, terpenes,
- 4 porphyrins, flavonoids, steroids and alkaloids which have two
- 5 or more reactive functional groups and are capable of
- 6 polymerizing.
- 1 10. A bio-liquid crystal polymer, comprising a
- 2 homopolymer which is produced by polymerizing one selected from
- 3 nucleic acids, amino acids, saccharides, fatty acids, terpenes,
- 4 porphyrins, flavonoids, steroids and alkaloids which have two
- 5 or more reactive functional groups and are capable of

- 6 polymerizing and have a rigid structural unit such as alicyclic,
- 7 double bond and triple bond.
- 1 11. A bio-liquid crystal polymer, comprising a copolymer
- 2 of hydroxycinnamic acid and lithocholic acid.
- 1 12. The bio-liquid crystal polymer according to claim 11,
- 2 wherein:
- 3 said bio-liquid crystal polymer includes lithocholic
- 4 acid of 0 to 70 mol%.
- 1 13. The bio-liquid crystal polymer according to claim 11,
- 2 wherein:
- 3 said bio-liquid crystal polymer includes lithocholic
- 4 acid of 0 to 30 mol%.
- 1 14. A shaped material for biocompatible parts, comprising
- 2 a copolymer of hydroxycinnamic acid and lithocholic acid or
- 3 polyhydroxycinnamic acid.
- 1 15. A shaped material for parts requiring mechanical
- 2 strength and thermal resistance, comprising a copolymer of
- 3 hydroxycinnamic acid and lithocholic acid or
- 4 polyhydroxycinnamic acid.
- 1 16. A shaped material for fibers, comprising a copolymer
- 2 of hydroxycinnamic acid and lithocholic acid or
- 3 polyhydroxycinnamic acid.

- 1 17. A shaped material for optical parts having an optical
- 2 characteristic to be changed by light irradiation or heating,
- 3 comprising a copolymer of hydroxycinnamic acid and lithocholic
- 4 acid or polyhydroxycinnamic acid.